REMARKS

Claims 1-20 and 22 are pending in the present application. In the above amendments, Claims 13, 16, 17, 19, 20 and 22 have been amended.

Applicants thank the Examiner for indicating Claims 5, 11, 17 and 18 would be allowable if rewritten in independent form. Claim 17 has been rewritten in independent form, and Claim 18 depends from Claim 17.

The December 6, 2005 Office Action rejected Claims 1, 2-4, 6, 7-10 and 12-15 under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (U.S. 5,581,652) in view of Jensen et al. (U.S. 6,362,762 B1).

Three criteria should be met to establish a *prima facie* case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be reasonable expectation of success. Third, the prior art reference, or references when combined, must teach or suggest all of the claim limitations.

First, there is no motivation to combine Abe and Jensen. Abe relates to "reconstruction of wideband speech from narrowband speech using codebooks" (title). In contrast, Jensen relates to a "multiple mode analog-to-digital converter" (title). An electronic search of Jensen shows that Jensen does not mention the words "speech," "voice," and "vocoder." Thus, one of ordinary skill in the art would not be motivated to combine Abe and Jensen. The problem addressed by Abe is different from the problem addressed by Jensen. There is nothing in Abe to suggest a need for Jensen's "multiple mode analog-to-digital converter." Thus, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Abe or to combine Abe and Jensen's teachings.

In addition, neither Abe nor Jensen suggest a desire or need to switch between wideband speech and narrowband speech, which is described in the Applicants' specification and addressed by Claim 1. As the Office Action acknowledges, Abe does not disclose the "switch" of Claim 1.

Jensen discloses a "switch 211" that can connect an "ADC input" to a "wideband path 210" (Fig. 5, col. 6, lines 20-30). Another "switch 221A" can connect the "ADC input" to a "narrowband path 220A." But there is no suggestion in Jensen that the "wideband path 210" or

the "narrowband path 220A" involves speech. There is no suggestion in Jensen that the "narrowband path 220A" converts wideband speech to narrowband speech, as recited in Claim 1. Thus, there is no motivation to combine Abe and Jensen.

Second, there is no reasonable expectation of success.

Third, even if Abe and Jensen were combined, the combination does not teach Claim 1. Abe and Jensen do not teach the "control element" of Claim 1 "for determining whether to convert the wideband speech signal into the narrowband speech signal." The Office Action (p. 3) cited the "LPC analyzer 306" in Abe as teaching the "control element" of Claim 1. But the "LPC analyzer 306" in Abe only synthesizes wideband speech (Fig. 4; col. 5, lines 64-65; col. 6, lines 14-15). The "LPC analyzer 306" in Abe does not determine whether to convert a "wideband speech signal into the narrowband speech signal," as performed by the "control element" in Claim 1. Furthermore, the "LPC analyzer 306" in Abe does not control a "switch," as recited in Claim 1.

Jensen also does not teach the "control element" of Claim 1 "for determining whether to convert the wideband speech signal into the narrowband speech signal." Fig. 5 in Jensen does not show a "control element" of Claim 1 "for determining whether to convert the wideband speech signal into the narrowband speech signal."

In addition, Abe and Jensen do not teach a "bandwidth switching filter" that "produces an output signal with a non-flat frequency spectrum," as recited in Claim 1. The "perceptually pleasing" effect of a "non-flat frequency spectrum" versus a "flat frequency response" is described on p. 8, line 21 to p. 9, line 26. Examples of a "non-flat frequency spectrum" are shown in Applicants' Figs. 3B, 3C and 3D.

Finally, Abe and Jensen do not teach an apparatus with a "down sampler for decimating the output signal of the bandwidth switching filter," as recited in Claim 1. In Fig. 2 of Abe, "down-sampling 200" occurs before "bandpass filtering 201."

Claims 2-4 and 6 depend from Claim 1 and should be allowable for at least the reasons stated above.

Claim 7 should be allowable because Abe and Jensen do not teach the "control element," "switch," and "non-flat frequency spectrum," as stated above for Claim 1. Claims 8-10 and 12 depend from Claim 7 and should be allowable for at least the reasons stated above.

Claim 13 recites a "post-filter element" and a "bandwidth switching filter." An example is shown in Fig. 6 and described on pp. 11-12. Abe does not teach Claim 13 because Fig. 2 of Abe shows a "bandpass filtering" element 201 but does not show a "post-filter element," as recited in Claim 13. Fig. 4 in Abe only shows a single "filter 307." Thus, Abe does not teach the "post-filter element" and "bandwidth switching filter" of Claim 13.

In addition, Abe does not teach a "bandwidth switching filter for ... outputting a narrowband signal with a non-flat frequency spectrum," as recited in Claim 13. Claims 14-15 depend from Claim 13 and should be allowable for at least the reasons stated above.

The Office Action rejected Claims 16, 19, 20 and 22 under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (U.S. 5,581,652) in view of Lee et al. (U.S. 6,539,050 B1.).

The combination of Abe and Lee does not teach Claim 16. As the Office Action acknowledges, Abe does not teach:

"receiving a signal carrying a wideband waveform at a base station, wherein the wideband waveform is for further transmission from the base station to a target destination;

determining whether the target destination can process the wideband waveform;

if the target destination cannot process the wideband waveform, then converting the wideband waveform into a narrowband waveform with a non-flat frequency response; and

if the target destination can process the wideband waveform, then transmitting the wideband waveform from the base station to the target destination without converting the wideband waveform into a narrowband waveform," as recited in Claim 16.

The Office Action relies on Lee to teach elements of Claim 16 missing in Abe. But Lee uses the term "narrow-band" to refer to carrier frequency modulation (col. 4, lines 23-25), not a converted frequency spectrum of a voice signal in Claim 16. Specifically, Lee describes a process of "modulating one or more carrier frequencies 15 with relatively narrow bandwidths (e.g., 1.25 MHz as is used for a conventional voice cellular channel)" (col. 4, lines 23-25). In contrast, Claim 16 recites a "narrowband speech waveform," which may have a frequency spectrum of 1000 to 3400 Hz, for example (see Figs. 3B-3D). The carrier frequency modulation process in Lee may be performed at a different stage and with different components than the voice decoding techniques described in Applicants' specification.

Likewise, Lee does not teach a "wideband speech waveform," as recited in Claim 16. The "wideband signals 16" in Lee are "data signals" (col. 4, lines 36-39), not speech signals. The "signals 16" in Lee are "transmitted by modulating a carrier frequency 15 with a relatively wide bandwidth ... e.g., ... 3.75 MHz" (col. 4, lines 35-44). In contrast, Claim 16 recites a "wideband speech waveform," which may have a frequency spectrum of 1000 to 7000 Hz, for example (see Fig. 3A).

Thus, Lee does not teach (a) "determining whether the target destination can process the wideband speech waveform" and (b) "if the target destination cannot process the wideband speech waveform, then converting the wideband speech waveform into a narrowband speech waveform," as recited in Claim 16.

In addition, Abe and Lee do not teach a "narrowband waveform with a non-flat frequency response," as recited in Claim 16. The "perceptually pleasing" effect of a "non-flat frequency spectrum" versus a "flat frequency response" is described on p. 8, line 21 to p. 9, line 26. Examples of a "non-flat frequency spectrum" are shown in Applicants' Figs. 3B, 3C and 3D.

For at least these reasons, Claim 16 should be allowable over Abe and Lee.

Claims 19 and 20 should be allowable over Abe and Lee for at least some of the reasons stated above for Claim 16. In addition, Abe and Lee do not teach:

"comparing the final destination address to a plurality of destination addresses within an identification database;

if the final destination address matches one of the plurality of destination addresses within the identification database, then transmitting the wideband speech signal to the final destination address; and

if the final destination address does not match one of the plurality of destination addresses within the identification database, then:

converting the wideband speech signal into the narrowband speech signal,

wherein the narrowband speech signal has a non-flat frequency response; and

transmitting the narrowband speech signal to the final destination address," as recited in Claims 19 and 20.

Claim 22 should be allowable over Abe and Lee for at least some of the reasons stated above for Claims 16, 19 and 20.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

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By: _____

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